## THER UNITED STRATES OF AMERICA

TO ALL TO WHOM THESE: PRESENTS SHALL COME;

Airginia Jech Intellectual Properties, Inc.

DICCOS, THERE HAS BEEN PRESENTED TO THE

#### Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE, ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN SCODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY DIECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A SOFF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF HIS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEO.)

WHEAT, COMMON

'McCormick'

In Testimonn Missest, I have hereunto set my hand and caused the seal of the Hant Harriston Artestian Office to be affixed at the City of Washington, D.C. this first day of July, in the year two thousand three.

Pamphe.

Plant Variety Protection Office Agricultural Marketing Service Scharge of Agriculture

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

			•			
1. NAME OF OWNER				2. TEMPORARY DESIGN EXPERIMENTAL NAME	ATION OR	3. VARIETY NAME
Virginia Tech Inte	ellectual Proper	cties, In	ıc.	VA98W-591		McCormick
4. ADDRESS (Street and No., or R.F.D. No	., City, State, and ZIP Code, and Cod	untry)		5. TELEPHONE (include a	rea code)	FOR OFFICIAL USE ONLY
Virginia Tech Inte	ellectual Proper	ties, In	c.	540/951-937	<b>7</b> 8	PVPO NUMBER
1872 Pratt Dr., St Blacksburg, VA 24				6. FAX (include area code) 540/951-529	2	2003001
7. IF THE OWNER NAMED IS NOT A PERS ORGANIZATION (corporation, partnership, Corporation	CON*. GIVE FORM OF association, etc.)	8. IF INCORPO STATE OF II Virgi	PRATED GIVE NCORPORATION Inia	g. DATE OF INCORPORAT.  June 20, 19		1-30-2003
10. NAME AND ADDRESS OF OWNER REP	RESENTATIVE(S) TO SERVE IN TH	IS APPLICATION.	(First person listed will re	sceive all papers)		FILING AND EXAMINATION FEES:
Carl A. Griffey	•		•			F 2225 00
Crop and Soil Envir	ronmental Scienc	es				s coo
Virginia Tech Blacksburg, VA 240	161 0404				1	DATE 1-30-200
bracksburg, vA 240	761-0404				E	f i
				•		DATE 6/11/2003
11. TELEPHONE (Include area code) 540/231-9789	12. FAX (Include area code) 540/231-3431	13. E	MAIL cgriffey@vt	edu.		KIND (Common Name) eat, Common
15. GENUS AND SPECIES NAME OF CROP		16. F/	AMILY NAME (Botanical	)	17. IS THE	VARIETY A FIRST GENERATION
Triticum aestivum		Tr	iticeae		HYBRIC	J? ]YES ☑ NO
· repository)	story of the Variety ss Variety (Optional)	l varieties. proyed public	20. DOES THE OW VARIETY BE LI	NER SPECIFY THAT SEED OF MITED AS TO NUMBER OF GE Y THE FOUNDATION	THIS ASSES? TION  THIS NERATIONS	NO (If 'no'; go to item 22)  YES NO REGISTERED CERTIFIED
			1	lanation is necessary, please us	e the space i	indicated on the reverse.)
22. HAS THE VARIETY (INCLUDING ANY HARVE FROM THIS VARIETY BEEN SOLD, DISPOSE OTHER COUNTRIES?	ESTED MATERIAL) OR A HYBRID F ED OF, TRANSFERRED, OR USED	PRODUCED IN THE U.S. OR	23. IS THE VARIETY PROPERTY RIG	OR ANY COMPONENT OF THE HT (PLANT BREEDER'S RIGH	IE VARIETY TOR PATEN	PROTECTED BY INTELLECTUAL
YES  IF YES, YOU MUST PROVIDE THE DATE OF FOR EACH COUNTRY AND THE CIRCUMST.	NO FIRST SALE, DISPOSITION, TRAN ANCES. (Please use space indicate	NSFER, OR USE	☐ YES IF YES, PLEASE REFERENCE NU	GIVE COUNTRY, DATE OF FIL MBER. <i>(Please use space indic</i>	ING OR ISSI	UANCE AND ASSIGNED
24. The owners declare that a viable sample of basifor a tuber propagated variety a tissue culture we.  The undersigned owner(s) is(are) the owner of it and is entitled to protection under the provisions.  Owner(s) is(are) informed that false representati	ic seed of the variety will be furnisher ill be deposited in a public repositor his sexually reproduced or tuber pro- of Section 42 of the Plant Variety Pi	d with application a y and maintained fo cagated plant variet rotection Act.	nd will be replenished up in the duration of the cent by, and believe(s) that the	ion request in accordance with sificate.	such regulation	ons as may be applicable, or
SIGNATURE OF OWNER	West:		SIGNATURE OF OWN	IER .		
NAME (Please print or type)  Michael J. Martin			NAME (Please print or	(type)		
CAPACITY OR TITLE  Executive Vice Pre	esident DATE	/2 >	CAPACITY OR TITLE			DATE

#### McCormick Wheat

18A. Exhibit A: Origin and Breeding History

McCormick wheat, formerly designated VA98W-591, was derived from the cross VA92-51-39/AL870365. The parentage of VA92-51-39 is IN71761A4-31-5-48// VA71-54-147 (CItr 17449)/ 'McNair 1813'. Wheat line IN71761A4-31-5-48 was developed by Purdue University and has the pedigree 'Benhur'/3/' Arthur'/' Knox' type line with gene H5 for Hessian fly resistance/4/'Beau'\*2/3/Arthur\*2//'Riley'/'Bulgaria 88'. The wheat line AL870365 was derived from the cross 'Coker 747'\*2/' Amigo' by the Coker Breeding Program now a part of Sygenta and was selected as a parent from the 1990-91 Uniform Eastern Soft Red Winter Wheat Nursery. The cross was made in spring1992, and the F<sub>1</sub> generation was grown in the field as a single 4ft headrow in 1993 to produce F<sub>2</sub> seed. The population was advanced from the F<sub>2</sub> to F<sub>4</sub> generation using a modified bulk breeding method.

Population Advancement and Selection of the Variety

Wheat spikes were selected from the population in each segregating generation (F<sub>2</sub>-F<sub>4</sub>) on the basis of absence of obvious disease, early maturity, short straw and desirable head shape and size. Selected spikes were threshed in bulk, and the seed was planted in 225ft² blocks in the fall of each year. Spikes selected from the F<sub>4</sub> bulk where threshed individually and planted in separate 4ft headrows. The wheat line VA98W-591 subsequently released as McCormick was derived as a bulk of one of these F<sub>5</sub> headrows selected in 1997. The line was tested as entry 591 in non-replicated observation tests in 1998 and was designated VA98W-591. McCormick was evaluated in preliminary tests conducted in VA, NC, MD, and KY for three years (1999-2001) in the Mason-Dixon Nursery (Tables 4-8). It was tested in 2000 and 2001 under conventional (Tables 1-2) and no-tillage (Table 3) management systems in the Virginia Official Variety Trial. It was evaluated throughout the soft red winter wheat region in the USDA-ARS Uniform Southern and Uniform Eastern Soft Red Winter Wheat Nurseries in 2001 (Tables 9-14).

**Multiplication and Purification** 

Initial Breeder Seed of McCormick was developed in 2000-01 via removal of variant plants from a 6,000 ft<sup>2</sup> seed increase block, and was planted on 1.9 acres at the VCIA Foundation Seed Farm in the fall of 2001. This increase block produced 195 bu of Foundation Seed in 2001, which was planted on 55 acres in fall 2002. While McCormick has remained stable and uniform in composition through the last two generations of multiplication, the initial Breeder Seed contained the following proportion of variants: up to 1% taller plants, 0.1% shorter plants, 1% plants with yellow green color at booting, 0.1% plants with blue color at booting, 0.5% plants having yellow straw near physiological maturity, 0.1% awned spikes, 0.1% strap (blocky) spikes, 0.05% crooked spikes, and 0.05% green waxy spikes.

Development of a purer source of Breeder Seed was initiated in fall 2000. In an isolation block, 280 headrows of McCormick were planted and evaluated for purity and trueness of type from which 136 headrows were harvested individually. Seed from the 136 selected headrows was used to plant individual 115 ft² plots in the fall of 2001. Plots were assessed for homogeneity and trueness of type in spring 2002, and 39 variant plots were removed prior to harvest. The remaining 97 plots were harvested in bulk to form a new source of McCormick Breeder seed, which was planted on 10 acres at the VCIA Foundation Seed Farm in fall 2002.

#### McCormick Wheat

#### 18B. Exhibit B: Novelty Statement

McCormick wheat is uniquely different from all known cultivars. In comparison to other wheat cultivars which it has been tested with, it is most similar to 'Coker 9835' and its sib 'Tribute'. McCormick and Tribute both possess the 1AL/1RS translocation and gene Pm17 governing resistance to powdery mildew (Blumeria graminis) from 'Amigo', which they inherited from their parent AL870365, while Coker 9835 lacks this translocation and Pm17. McCormick possesses gene Lr24 governing resistance to leaf rust (Puccinia triticina) while Tribute possess genes Lr9 and Lr24, and Coker 9835 possesses genes Lr2a, Lr9, and Lr11, but lacks Lr24. McCormick possesses genes Sr6, Sr17, and Sr24 governing resistance to stem rust (Puccinia graminis), while Tribute possesses gene Sr24, and Coker 9835 possesses genes Sr17 and Sr36. Seedlings of McCormick and Tribute are susceptible to Hessian fly [Mayetiola destructor (Say)] biotypes GP, B, C, D, E, and L, while those of Coker 9835 are resistant to biotypes GP, C, and E. McCormick is moderately resistant to soilborne mosaic virus while Tribute is moderately susceptible on the basis of reactions (0=Resistant to 9=Susceptible) observed in the USDA-ARS Uniform Southern Soft Red Winter Wheat Nursery in 2001 (McCormick=1.0 versus Tribute=7.0), Uniform Eastern Soft Red Winter Nursery in 2001 (McCormick=1.0 versus Tribute=6.5) and 2002 (McCormick=3.0 versus Tribute=7.5). McCormick produces anthocyanin in its stems, which become reddish purple upon ripening, while Tribute lacks anthocyanin in its stems, which become yellow near physiological maturity.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE LIVESTOCK AND SEED DIVISION BELTSVILLE, MARYLAND 20705

EXHIBIT C

## OBJECTIVE DESCRIPTION OF VARIETY WHEAT (TRITICUM SPP.)

NAME OF APPLICANTS	
	FOR OFFICIAL USE ONLY
Virginia Tech Intellectual Properties, Inc. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	200300115
	VARIETY NAME OR TEMPORARY
1872 Pratt Drive, Suite 1625 Blacksburg, VA 24060	DESIGNATION
blacksbulg, VA 24000	McCormick
Place the appropriate number that describes the varietal character of this variety i	
Place a zero in first box (e.s. 0 8 9 or 0 9 ) when number is either 99 or les	n the poxes below.
1. KIND:	
1 1 COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = 1	POULARD 7 = CLUB
2. TYPE,	_
2 1 = SPRING 2 = WINTER 3 = OTHER /Specific 1 2 = MARD	3 = OTHER (Specify)
2 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 1 2 = HARD	
2 1 = WHITE 2 = RED 3 = OTHER (Specify)	-
3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:	
FIRST FLOWERING	AST FLOWERING
4. MATURITY (50% Flowering):	
2 NO. OF DAYS EARLIER THAN	UD 2 # 400UT 2 # 400
1 = ARTH	UR 2 = SCOUT 3 = CHRIS
2 NO. OF DAYS LATER THAN	
/=Roane	e 8=AGS 2000
5. PLANT HEIGHT (From soil level to top of head):	•
7. 9 cm. High	
0 CM. TALLER THAN	9835 8=AGS 2000
1 = ARTHI	ur 2 = SCOUT 3 = CHRIS
6 CM. SHORTER THAN 8	5 = NUGAINES 6 = LEEDS
6. PLANT COLOR AT BOOTING (See reverse): 7. ANTHER COLO	
[a].	•
2 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN 1 1 = YELLOW	2 = PURPLE
8. STEM:	<u></u>
2 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Vary bloom:	1 - ADECUM 3 - DECEMENT
	1 = ABSENT 2 = PRESENT
1 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT 1 Internodes:	1 = HOLLOW 2 = SOLIO
Internodes:	F HOLLOW 2 = SOLID
f it is a NO. UP NOOFS (Oddinating languages and a should describe the little to the l	TERNODE LENGTH BETWEEN FLAG LEAF
	EAF BELOW
9. AURICLES:	
1 Anthocyania: 1 = ABSENT 2 = PRESENT 2 Hairiness: 1	= ABSENT 2 = PRESENT
10. LEAF:	·
1 Flag leaf at 1 = ERECT 2 = RECURVED 2 Flag leaf: 1	= NOT TWISTED 2 = TWISTED
3 = OTHER (Specify):	- 401 impien 7 - impien
2 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT 2 Waxy bloom of	files leaf sheath: 1 = ABSENT 2 = PRESENT
Taxy Dioon of	ring test speats. I a chaptur Lucsen !
MM. LEAF WIDTH (First leaf below flag leaf) CM. LEA	AF LENGTH (First leaf below flag leaf):
	A PEGALD Is man tage annual right tamb
FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)	

11. HEAD:  3 Density: 1 = Lax 2 = DENSE 3=Mid-dense	Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE  1
3 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED	3 = AWNLETED 4 = AWNED
2 Color at maturity: 5 = BROWN 6 = BLACK 7 = OTH	= RED ER (Specify):
0 7 CM. LENGTH	1 3 MM. WIDTH
12. GLUMES AT MATURITY:  1 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)  3 = LONG (CA. 9 mm.)	2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)
3 Shoulder 1 = WANTING 2 = OBLIQUE 3 = ROUNDED shape: 4 = SQUARE 5 = ELEVATED 6 = APICULATE	Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE
13. COLEOPTILE COLOR:	14. SEEDLING ANTHOCYANIN:
2 I = WHITE 2 = RED 3 = PURPLE	1 1 = ABSENT 2 = PRESENT
15. JUVENILE PLANT GROWTH HABIT:	
1 1 = PROSTRATE 2 = SEMI-ERECT 3 = EREC	cr
16. SEED:	
1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL	1 Check:   = ROUNDED 2 = ANGULAR
1 Brush 1 = SHORT 2 = MEDIUM 3 = LONG	Brush: I = NOT COLLARED 2 = COLLARED
Phenol reaction 1 = IVORY 2 = FAWN 3 = LT. BROW  (See instructions): 4 = BROWN 5 = BLACK	<b>N</b>
3 Color: I = WHITE 2 = AMBER 3 = RED 4 = PURPLE	5 = OTHER (Specify)
0 6 MM. LENGTH 0 3 MM. WIDTH	3 4 GM. PER 1000 SEEDS
17. SEED CREASE:	
	Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 80% OR LESS OF KERNEL 'CHRIS'	2 = 35% OR LESS OF KERNEL 'CHRIS'  3 = 50% OR LESS OF KERNEL 'LEMHI'
3 = NEARLY AS WIDE AS KERNEL "LEMHI"  18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)	
2 STEM RUST Genes 2 LEAF RUST (Races) Gene Lr24	2 STRIPE RUST (Racee) Field Tests 0 LOOSE SMUT
2 POWDERY MILDEW 0 BUNT	2 OTHER (Specify) Soilborne Mosaic Virus
19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)	
0 SAWFLY 2 APHID (Bydv.)	O GREEN BUG 1 CEREAL LEAF BEETLE
1 OTHER (Specify) HF Biotype L HESSIAN FLY	1 GP A 1 G
RACES:	1 0 1 E F G
O. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SE	FEMILT S.D.
CHARACTER NAME OF VARIETY	CHARACTER NAME OF VARIETY
Plant tillering	Seed size
Leaf size	Seed shape
Leaf color	Caleaptile elangation
Leaf carriage	Seedling pigmentation

#### INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachments)

#### McCormick Wheat

#### 18D. Exhibit D: Additional Description of McCormick

Since McCormick has not been tested in comparison with any of the six cultivars listed in Exhibit C, performance data are presented in Tables 1-16. McCormick is a mid-season, high-yielding, short-stature, awnleted, soft red winter wheat with good straw strength. Head emergence is 2 days later than 'AGS 2000' and 2 days earlier than 'Roane'. Average plant height of McCormick (31 inches) is similar to that of 'Coker 9835' and 2 inches shorter than AGS 2000. Straw strength (0=No lodging, 9=Completely lodged) of McCormick is good (range of 0 to 2.6 and mean of 0.9) and is better than that of 'Coker 9663' (range of 1.0 to 4.4 and mean of 2.2). In Virginia (Tables 1-3), grain yields of McCormick have been similar or exceeded those of the best check cultivars and over the past two years (2000-2001) have averaged 83 bu/ac versus a mean yield over all genotypes of 76 bu/ac. Grain of McCormick is high in test weight (mean of 60.5 lb/bu), which is similar to that of Roane (60.2 lb/bu) and 3 lb/bu higher than that of Coker 9835. McCormick was evaluated in the 2001 USDA-ARS Uniform Southern Soft Red Winter Wheat Nursery (Tables 9,10), and ranked 1st among 43 entries for grain yield (77 bu/ac) and ranked 6th for test weight (59.1 lb/bu). McCormick also was evaluated in the 2001 Uniform Eastern Soft Red Winter Wheat Nursery (Tables 12,13), and ranked 1st among 44 entries for grain yield (79 bu/ac) and ranked 5th for test weight (60.1 lb/bu). Based on data from six test sites in the Uniform Eastern SRW Wheat Nurseries (Table 13), winter-survival of McCormick is good and similar to that of 'Caldwell'. Milling quality of McCormick (Tables 11,14) is good and superior to that of Roane and to that of its sib cultivar Tribute (VA98W-593). Grain of McCormick produces more flour than that of Roane and Tribute and its flour is softer in texture than that of Coker 9663 and Tribute. Baking quality of McCormick is good and superior to that of Roane, Coker 9663, and Tribute for cookie production. Flour of McCormick absorbs less water and produces cookies of larger diameter than those of Tribute, Roane and Coker 9663.

Reaction of McCormick to disease and insect pests has been evaluated over a broad area (Tables 1-4, 6, 8, 10, 13, 15, 16). McCormick is resistant to powdery mildew (Blumeria graminis). In seedling tests of entries in the 2001 Uniform Eastern and Southern SRW Winter Wheat Nurseries conducted by USDA-ARS Plant Science Research Unit in Raleigh, NC, McCormick expressed resistance to 24 of 30 isolates. McCormick possesses the Pm17 gene from Amigo in addition to other non-identified genes. Similar data from the Cereal Disease Laboratory in St. Paul, MN, indicates that McCormick possess gene Lr24 conferring resistance to leaf rust (Puccinia triticina) and genes Sr6, Sr17, and Sr24 conferring resistance to stem rust (Puccinia graminis). The older version of Exhibit C which limits disease reaction classes to resistant or susceptible was submitted with this PVP application; however, on the basis of the classifications in the revised Exhibit C, McCormick exhibits an Intermediate to Resistant reaction to stripe rust (Puccinia striiformis), soil borne mosaic virus, leaf blotch (Septoria tritici), glume blotch (Stagonospora nodorum), fusarium head blight (Fusarium graminearum), barley yellow dwarf virus, and wheat spindle streak mosaic virus. On the basis of seedling tests conduct by USDA-ARS at West Lafayette, IN, McCormick is susceptible to Hessian Fly [Mayetiola destructor (Say)] biotypes GP, B, C, D, E, and L.

		<u> </u>	Te	est	Da	ate			1		Po	wdery		Leaf
	١	rield	We	ight	Hea	ded	He	eight	Lod	ging♥	М	ildew	1	Rust
Line	(Bi	ı/acre)	(Lb/	bu)	(Mar	31+)	(	in)	(0.2	2-10)		(0-	-9) <b></b>	•
		(7)	(7	7)	(4	I)	(	3)	(	5)		(4)		(1)
VA98W-591(RT)	83	+	60.0	+	34	+	29	-	2.6		0	-	0	-
VA98W-593(RT)	87	+	60.3	+	33		30		2.8		0	-	0	-
USG 3209(RT)	84	+	57.6		33		28	-	3.3		2	-	1	
PIONEER 26R24(B)	84	+	57.8		33		34	+	3.4		3		2	+
SISSON (RT)	83	+	57.5		31	-	30		4.3	+	2	-	1	
CENTURY II(D)	83	+	58.2		33		31		4.0		4	+	0	_
SS520	83	+	56.9		32	-	33	+	4.0		3		3	+
SS550	83	+	57.5		33		29	-	3.7		2	_	1	
AGS2000	75		57.9		32	-	31		4.6	+	2	_	0	-
PIONEER 26R38(B)	76		57.2		33		34	+	3.9		1	_	1	
PIONEER 26R61(B)	72	-	59.1	+	34	+	33	+	2.0	-	3		0	-
FFR 518(RT)	78		56.6		32	-	30		5.3	+	1	-	0	-
Test Average	77		57.3		33		31		3.1		3		1	
S.D. (0.05)	4		1.2		1		2		1.1		1		1	
D.V.	8		3.5		3		5		5.7		43		47	
A plus or minus sign indi	icates a p	erformar	nce signifi	cantly at	ove or	below	the te	st aver	age.					•
he number in parenthese	es below o	column h	eadings in	ndicates	the nu	mber o	of locat	ions o	n which d	lata are	based.			
<ul> <li>Belgian Lodging Scale</li> </ul>														
lot affected and Intensity	= 1-5, wh	ere 1 is	wheat sta	nding up	right a	nd 5 is	wheat	totally	flat.					
The 0-9 ratings indicate	relative	disease i	intensity w	vhere 0=	none a	nd 9=t	otal pla	ant infe	ction.					
		T.		1			T					•		

Table 2. Summary of performance of VA98W-591 in the Virginia Tech Wheat Test, 2000 harvest.\*

Brand/Variety	Yield (Bu/A) (7)	Test Weight (Lb) (6)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging** (0.2-10) (5)	Powdery Mildew (2)	Leaf Rust (0-9)◊ (2)	Barley Yellow Dwarf (2)
VA98W-591	82 ÷	59.0+	31 +	36	0.6	0	1 -	2
VA98W-593	80 +	58.9+	30	37	1.0	ő	0 -	2
VA97W-469	74	56.2 -	30	39	1.3	ŏ	4	2
USG 3209	83 ±	57.3	27 -	36	1.8+	Ö	5 ÷	2
PIONEER 26R24(B)	83 +	57.4+	29 -	40	0.8	Ŏ	3	2
SISSON	82 ±	57.7÷	29 -	36	1.1	0	7 +	2
CENTURY II(D)	<b>7</b> 9 +	58.2+	29 -	39	1.4	3	3	2
SS 520	79 +	56.8	26 -	40	0.9	1	2	2
SS 550	80 ÷	57.4+	31 +	37	1.4	0	6 +	2
AGS 2000	81 +	57.8+	28 -	39	1.5	0	0 -	2
PIONEER 26R38(B)	78 +	57.2	29 -	42	0.7	0	4	2
PIONEER 26R61(B)	80 +	59.1+	29 -	41	0.3 -	0	2	2
FFR 518(R)	78 +	56.3 -	25 -	36	2.2 +	0	0 -	2
Test Average (n=71)	75	56.9	30	38	1.0	1	3	2
L.S.D. (0.05)	3	0.5	I		0.7	ī	2	1
C.V.	8	1.5	3	3	102.7	87	49	25

<sup>\*</sup> A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based.

♦The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

<sup>\*\*</sup> Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

2000 and 2001 harvests.*												
	2-yea	r	1-yea	r	Test	Date				Powde	ery	Wheat
	A	vera	ige yield		Weight	Heade	Ŀ	Heigh	t	Milde	w	Spindle
Line		(Bu	/acre)		(Lb/bu)	(Mar 31	+)	(In)		(0-9)	•	Streak*
VA98W-591(RT)	91		88		60.6	37	+	25	-	0	-	R
VA98W-593(RT)	93	+	97	+	61.1	35	-	27		0	-	R
USG 3209(RT)	93	+	97	+	58.2	36		25	_	0	-	R
PIONEER 26R24(B)	90		90		58.7	37	+	27		2	+	S
SISSON (RT)	97	+	100	+	59.8	33	-	25	-	1		R
CENTURY II(D)	87		88		59.3	37	+	27		2	+	S
SS520	96	+	97	+	58.4	33	- 1	29	+	0	-	MS
SS550	94	+	94		59.3	35	-	24	-	0	-	R
AGS2000	81		85		58.4	39	+	26	-	0	-	VS
PIONEER 26R38(B)	86		90		59.3	37	+	28	+	0	-	VS
PIONEER 26R61(B)	82		85		59.5	38	+	31	+	3	+	R
FFR 518(RT)	83		90		58.3	37	+	26	-	0	-	s
est Average (n=71)	86	-	88		58.3	36		27		1		
S.D, (0.05)	6		9		5.9	1		1		1		
C.V.	7		7		7.3	3		4		68		
A plus or minus sign indicates a p	performance	sign	nificantly ab	ove	or below the te	st average.						
The 0-9 ratings indicate relative	disease inte	nsity	y where 0=i	none	and 9=total pl	ant infection	1.					
Wheat spindle streak virus rating	s are R=res	istar	nt, MR=mod	dera	tely resistant, N	/IS=modera	tely s	usceptible	, S=	suscepti	ble,	
nd VS=very susceptible. Ratings												
at VA Tech.			1			<u>_</u>						

The state of the second

Warsaw, Virginia. The number under each column heading indicates the number of locations upon which data are based.	he number	r under ea	ch column h	ni ule 2000-20 eading indical	tes the number	The number under each column heading indicates the number of locations upon which data are based.	nter wneat pon which	Nursery n data are ba	n blacksbur ised.	g and	
	Overall	Overall	Overall Test Weight	Blackshirg	Rlackehurg	Blacksburg Test Weight	Warsaw	Moreous	Warsaw Test	Heading	Early Plant Heiobt
Line	(bu/a)	$\mathbf{Rank}^1$	(nq/sqI)	Yield (bu/a)	Rank	(lbs/bu)	(bu/a)	Rank	(lbs/bu)	(Julian)	(in.) <sup>2</sup>
	2	2	2	<del>,</del>	1		1	1	1	2	1
COKER 9663	69.3	56	56.4	6.92	43	56.9	61.8	61	55.8	126	13
AGRIPRO FOSTER	64.3	81	55.7	64.6	68	55.7	64.0	55	55.7	127	14
PIONEER 2580	69.5	55	54.8	72.5	72	54.5	66.5	43	55.0	125	11
ROANE	70.2	51	58.2	85.3	11	58.3	55.1	87	58.1	126	11
VA98W-591	84.1	က	57.5	87.0	8	57.9	81.2	<b>∞</b>	57.1	125	12
VA98W-593	78.4	18	58.4	87.2	9	59.0	9'69	26	57.8	124	12
Grand Mean (n=98)	2.07		26.0	76.0		56.1	65.5		55.9	125	13
LSD (0.05)	5.3		1.0	7.4		6.0	7.6		1.9	Н	1
				Lodging							
	Plant	Powdery	Lodging	Prior to							
-	Height	Mildew	on 5/15 (0	Harvest							
Line	(in.)	<sub>E</sub> (6-0)	6	$(0.2-10)^4$							
	2	2	1	2							
COKER 9663	34	9		5.1							
AGRIPRO FOSTER	30	9	0	5.9							
PIONEER 2580	28	2	2	4.3							
ROANE	28	4	0	3.6							
VA98W-591	28		0	3.8							
VA98W-593	28	0	1	3.8							
Grand Mean (n=98)	29	3	. 1	3.8							
LSD (0.05)	1	_	2	1.0							
<sup>1</sup> Rank according to yield.	yield.										
$^2$ Early plant height serves as an indicator of spring growth habit.	serves as	an indicato	r of spring	growth habit.							

Table 5. Summary of performance of selected entries in the 2000-2001 Mason-Dixon Soft Red Winfer Wheat Nurseau in Kontrol.	of performan	ce of selec	ted entries ir	n the 2000-2	001 Mason-	Dixon Soft	Red Winter V	Theat Mureau	Tribut V on tr			
Maryland, North Carolina, Tennessee, and Virginia.	arolina, Tenr	lessee, and	l Virginia.					TICAL TAMESCA	y ni Nezitui	, <del>(</del> <del>'</del> <del>'</del> <del>'</del>		
					North			e general to be				
	Kentucky		Maryland		Carolina	North			Virginia		0,10	
	Yield	Yield Kentucky Yield	Yield	Maryland	Yield	Carolina	Tennessee	Tennessee	Viold	/inginia	Violal Violal	1
Line	(bu/a)	$\mathbf{Rank}^1$	(bu/a)	Rank	(bu/a)	Rank	Yield (bu/a)	Rank	e opažet	Rank	(bu/a)	Rank
COKER 9663	82.0	85	80.3	40	83.2		673	7.7	, 693	7,7	7 27	EA
AGRIPRO FOSTER	110.7	1	77.6	19	81.1	18	63.3	70		2 5	0.00	40
PIONEER 2580	94.8	38	9.69	94	73.0	45	. 84.6	10	707	10 K	01.0	5
ROANE	- 96.4	31	85.6		80.4	10		30	7.7.7	3 2	ָרָר בְּיִרְ מַרְיִינִי	Q 6
VA98W-591	6.08	28	76.5	72	87.5	. 4	9.00		, C. Z.	د ا	, c	3 5
VA98W-593	101.5	11	88.5	7	82.9	. 12	86.6	9	78.4	α <u>τ</u>	50.7 70.7	
Grand Mean (n=98)	91.4		79.5		69.2		72.6		70.7	2	76.7	-
<sup>1</sup> Rank according to yield.	o yield.											

Overall   Overall   Rank   Test   Blacksburg   Weight   Yield   Yield   (Ibs/bu)   (bu/A)	Overall R. Yield Acconne (bu/A) to 2 2 2 81.7 31.7 31.7 32.5 38.6.1 38.8 38.8 38.8 38.8 38.8 38.8 38.8 39.7 30.7 30.7 30.7 30.7 30.7 30.7 30.7 30	erall O ank vield (II (II (II (II (II (II (II (II (II (I	verall Test F Veight bs/bu) 2 2 59.5 59.1 57.8 60.5 61.1 61.1 61.5 58.5	Macksburg Yield (bu/A) 1 81.2 72.5 87.9 97.1 82.8 77.9 82.8	Blacksburg Rank According to Yield 1 1 1 1 1 2 29 29 11	Blacksburg	Warsaw Yield (bu/A) 1 1 82.2 72.4 84.3 73.6 88.5 94.5	Warsaw Rank According to Yield 1 78 78 72 75 75	Warsaw Test Weight (lbs/bu)	Heading Date	Plant
Overall Nield         Rank According Neight According (bu/A)         Test (bu/A) (bu/A)         Reight According (bu/A)         Weight According (bu/A)         Weight According (bu/A)         Weight According (bu/A)         Weight According (bu/A)         According (bu/A)         Weight According (bu/A)         According (bu/A)         Weight According (bu/A)         According (bu/A)         Meight According (bu/A)         According (bu/A)         Meight According (bu/A)         A	Overall Yield (bu/A)  2 2 2 81.7 72.5 86.1 86.1 86.2 86.2 86.2 86.2 86.2 86.2 67 6.7			Slacksburg Yield (bu/A) 1 81.2 72.5 87.9 97.1 82.8 77.9 82.8 77.9		Test Weight (Ibs/bu)  1 59.0 59.1* 58.3 60.9* 59.5 61.3*	Warsaw Yield (bu/A) 1 82.2 72.4 84.3 73.6 88.5 94.5	Rank According to Yield 1 36 78 78 77 75 75	Test Weight (lbs/bu)	Heading Date	Plant
Yield (bu/A)         According (bu/A)         Weight (bu/A)         Yield (bu/A)           2         2         2         1           2         2         2         1           81.7         37         59.5         81.2           81.7         37         59.5         81.2           72.5         74         59.1         72.5           86.1         16         57.8         87.9           85.4         20         60.5         97.1           86.2         17         61.1         77.9           88.8         4         61.5         82.8           89.         79.7         58.5         78.4           87.         6.7         0.8         6.6           6.7         0.8         6.6         6.6           6.7         0.9         0.9         8.2           8.         79.7         6.6         0         2           8.         6.         6.0         2         2           1.         6.         6         6         3           2.         6         6         6         3           2.         6         6         2 </th <th>Yield (bu/A) 2 2 2 81.7 72.5 86.1 85.6 88.8 88.8 88.8 88.8 88.8 88.8 88.8</th> <th></th> <th>Veight bs/bu)  2 2 59.5 59.1 57.8 60.5 61.1</th> <th>Yield (bu/A)  1 81.2 72.5 87.9 97.1 82.8 77.9 82.2 78.4</th> <th>According to Yield 1 38 66 66 14 1 1 2 29 11 11</th> <th>Weight (Ibs/bu)  1 59.0 59.1* 58.3 60.9* 60.9* 61.3*</th> <th>Yield (bu/A) 1 1 2.2.4 84.3 73.6 88.5 94.5 95.3</th> <th>According to Yield 1 36 78 75 75 75 9</th> <th>Weight (lbs/bu)</th> <th>Date</th> <th></th>	Yield (bu/A) 2 2 2 81.7 72.5 86.1 85.6 88.8 88.8 88.8 88.8 88.8 88.8 88.8		Veight bs/bu)  2 2 59.5 59.1 57.8 60.5 61.1	Yield (bu/A)  1 81.2 72.5 87.9 97.1 82.8 77.9 82.2 78.4	According to Yield 1 38 66 66 14 1 1 2 29 11 11	Weight (Ibs/bu)  1 59.0 59.1* 58.3 60.9* 60.9* 61.3*	Yield (bu/A) 1 1 2.2.4 84.3 73.6 88.5 94.5 95.3	According to Yield 1 36 78 75 75 75 9	Weight (lbs/bu)	Date	
81.7 37 59.5 81.2 81.7 37 59.5 81.2 81.7 72.5 74 59.1 72.5 86.1 16 57.8 87.9 86.1 16 57.8 87.9 86.2 17 61.1 77.9 88.8 4 61.5 82.2 88.8 4 61.5 82.2 88.8 6.7 0.8 6.6 6.7 0.8 6.6 1.0 0.9 6 6 6 3 2.6 6 0 2 2.6 6 0 2 2.6 6 0 2 2.7 0.8 6 6 2 3.0 0.9 6 6 6 2 3.0 0.3 0.0 2 2.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2 3.0 0.9 6 6 6 2	86.1 86.1 86.1 85.4 85.6 88.8 88.8 88.8 88.8		59.5 59.5 57.8 60.5 61.1 61.5 68.5	81.2 72.5 87.9 97.1 82.8 77.9 82.2 82.2	1 38 66 66 14 1 12 11	1 59.0 59.1* 58.3 60.9* 59.5 61.3*	72.4 84.3 73.6 88.5 94.5	22 75 75 75 75 9	1	(Inlian)	Height
81.7 37 59.5 81.2 72.5 74 59.1 72.5 86.1 16 57.8 87.9 85.4 20 60.5 97.1 85.6 19.0 58.9 82.8 86.2 17 61.1 77.9 88.8 4 61.5 82.2 88.8 4 61.5 82.2 88.8 4 61.5 82.2 89. 79.7 58.5 78.4  Co.7 0.9 66 6 6 3 0.2 1 0.9 6 6 6 3 0.8 3 5 2 0.9 6 6 6 2 0.0 6 2 0.8 0 6 6 6 0 2 0.8 3 5 2 0.9 6 6 6 6 0 2 0.8 3 5 2 0.9 6 6 6 2 0.9 6 6 6 2	81.7 72.5 86.1 85.4 85.6 86.2 88.8 89 79.7 6.7		59.5 59.1 57.8 60.5 61.1 61.5 58.5	81.2 72.5 87.9 97.1 82.8 77.9 82.2	38 66 66 14 12 12 11	59.0 59.1* 58.3 60.9* 59.5 61.3*	82.2 72.4 84.3 73.6 88.5 94.5	36 78 22 22 75 75 9	009	2	2
72.5   74   59.1   72.5     86.1   16   57.8   87.9     85.4   20   60.5   97.1     85.6   19.0   58.9   82.8     86.2   17   61.1   77.9     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     97.1   77.9     104ging   Mildew   Leaf Rust     102-10]   (0-9)^2   (0-9)   BYDV (0-9)     104   105   6   6   6     105   2   2     106   107   2     107   2   5     108   3   5   2     109   6   6   6     109   6   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   6   6     109   7     109	72.5 86.1 85.4 85.6 88.8 88.8 89.79.7 6.7		57.8 60.5 58.9 61.1 61.5 58.5	72.5 87.9 97.1 82.8 77.9 82.2 77.9	66 14 1 29 12 11	59.1* 58.3 60.9* 59.5 61.3*	72.4 84.3 73.6 88.5 94.5 95.3	22 75 14 14 9 9 9	2.20	121	39
86.1   16   57.8   87.9     85.4   20   60.5   97.1     85.6   19.0   58.9   82.8     86.2   17   61.1   77.9     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     88.8   4   61.5   82.2     6.7   0.8   6.6     1.6   0.9   6   6   3     1.6   0.6   0   2     1.6   0.6   0   2     1.6   0.6   0   2     1.6   0.7   2   5     1.6   0.7   2   5     1.6   0.8   3   5   2     1.6   0.8   0.8   2     1.6   0.8   0.8   2     1.6   0.8   0.8   2     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.6   0.8   0.8   0.8     1.7   0.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8     1.8   0.8   0.8	86.1 85.4 85.6 86.2 88.8 88.8 6.7 6.7		60.5 58.9 61.1 61.5 58.5	87.9 97.1 82.8 77.9 82.2 78.4	14 29 12 11	58.3 60.9* 59.5 61.3* 62.2	84.3 73.6 88.5 94.5 95.3	25 14 25 9	59.1	125	37
85.4 20 60.5 97.1 85.6 19.0 58.9 82.8 86.2 17 61.1 77.9 82.8 86.2 17 61.1 77.9 82.8 88.8 4 61.5 82.2 82.2 82.9 6.7 0.8 6.6 6.0 2 10.2-10]  Lodging Mildew Leaf Rust (0.2-10) <sup>1</sup> (0-9) <sup>2</sup> (0-9) BYDV (0-9) 1 ter 0.9 6 6 6 3 1 1 2 2 1 2 1 2 2 1 2 1 1 2 2 1 2 1 1 2 2 1 2 1 1 2 2 1 2 1 1 2 2 1 2	85.4 85.6 88.3 88.8 88.8 88.8 6.7 6.7		60.5 58.9 61.1 61.5 58.5	97.1 82.8 77.9 82.2 78.4	1 29 11	60.9* 59.5 61.3* 62.2	73.6 88.5 94.5 95.3	75 14 25 9	57.3	120	37
85.6 19.0 58.9 82.8 86.2 17 61.1 77.9 86.2 17 61.1 77.9 88.8 4 61.5 82.2 88.8 79.7 58.5 78.4 6.7 0.8 66.6 10.2-10) <sup>1</sup> (0-9) <sup>2</sup> (0-9) BYDV (0-9) 10 0.8 3 5 2 11 2 10 0.8 3 5 2 11 0.9 6 11.6 0 6 2 2 2 3 4 61.1 77.9 77.9 77.9 77.9 77.9 77.9 77.9 77.9	85.6 86.2 88.8 88.8 79.7 6.7		61.1 61.5 58.5	82.8 77.9 82.2 78.4	29 11	59.5 61.3* 62.2	88.5 94.5 95.3	14 25 9	60.1	124	34
86.2     17     61.1     77.9       =88.8     4     61.5     82.2       =88)     79.7     58.5     78.4       6.7     0.8     6.6       6.7     0.8     6.6       ne     (0.2-10) <sup>1</sup> (0-9) <sup>2</sup> (0-9)     BYDV (0-9)       ne     (0.2-10) <sup>2</sup> (0-9)     BYDV (0-9)       n	86.2 88.8 88.8 79.7 6.7		61.1 61.5 58.5	77.9 82.2 78.4	11	61.3*	94.5 95.3	25   9	58.2	31	36
88.8   4   61.5   82.2     79.7   58.5   78.4     6.7   0.8   6.6     6.7   0.8   6.6     Fowdery   Lodging Mildew   Leaf Rust     (0.2-10) <sup>1</sup>   (0-9) <sup>2</sup>   (0-9)   BYDV (0-9)     2   2   1   2     2   2   1   2     2   5   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   2     0.8   3   5   5     0.8   5   5     0.8   5   5     0.8   5   5     0.8   7   5     0.8	6.7		58.5	82.2	11	62.2	95.3	6	6.09	122	33
79.7   58.5   78.4     6.7   0.8   6.6     6.7   0.8   6.6	6.7		58.5	78.4					8.09	122	34
Powdery   Powdery			0.0			58.8	80.9		58.2	122	35
Powdery   Powdery   (0.2-10) <sup>1</sup>   (0.9) <sup>2</sup>   (0.9)   BYDV (0.9)       2			0.0	9.9		0.8	6.9		0.7	3	1
Powdery   Powdery											
Powdery   Powdery   Codging   Mildew   Leaf Rust   (0.2-10) <sup>1</sup>   (0-9) <sup>2</sup>   (0-9)   BYDV (0-9)   BYDV (0-9)   BYDV (0-9)   Codg   Cod											
Lodging         Mildew         Leaf Rust           (0.2-10) <sup>1</sup> (0-9) <sup>2</sup> (0-9)         BYDV (0-9)           2         2         1         2           2.6         6         0         2           0.9         6         6         6         3           0.8         3         5         2           0.7         2         5         2           0.7         2         5         2           0.3         0         6         6         2           0.3         0         6         2           0.3         0         6         2		vdorv			Plant	Juvenile					
(0.2-10) <sup>1</sup> (0-9) <sup>2</sup> (0-9)     BYDV (0-9)       2     2     1     2       2.6     6     0     2       0.9     6     6     3       0.8     3     5     2       0.7     2     5     2       1.6     0     6     2       0.3     0     6     2			af Rust		Height on	Growth					
2     2     1     2       2.6     6     0     2       0.9     6     6     3       0.8     3     5     2       0.7     2     5     2       1.6     0     6     2       0.3     0     6     2	$(0.2-10)^{1}$			BYDV (0-9)	3/24/00 (in) <sup>3</sup>	Habit (0-5) <sup>4</sup>					
2.6     6     0     2       0.9     6     6     3       0.8     3     5     2       0.7     2     5     2       1.6     0     6     2       0.3     0     0     2	2	2	1	2	<del></del> 1	Į.					
0.9     6     6     3       0.8     3     5     2       0.7     2     5     2       1.6     0     6     2       0.3     0     0     2		9	0	2	15						
0.8     3     5     2       0.7     2     5     2       1.6     0     6     2       0.3     0     0     2		9	9	හ	13	ŢĦ					
0.7     2     5     2       1.6     0     6     2       0.3     0     0     2		3	ນ	2	11	1					
$egin{array}{ c c c c c c c c c c c c c c c c c c c$	0.7	2	ī	2	6	0					
		0	9	7	11	1					
	0.3	0	0	2	6	0					
2 2		0	2	2	6	0					
Test Mean (n=88) 1.2 3 4 2 12		3	4	2	12	7-4					
LSD (0.05) 1.0 1 2 2 1	1.0	1	2	7	=	0			:		:

Kentucky         Maryland         Carolina         North         North         Vireld         Carolina         Vireld         Vireld         Vireld         Carolina         Vireld         Carolina	Table 7. Summary of performance of selected entries in the 1999-2000 Mason-Dixon Soft Red Winter Wheat Test in Kentucky, Marlyand, North Carolina, Tennessee, and Virginia.	y of performar Carolina, Ten	nce of sele nessee, an	cted entries i id Virginia.	in the 1999-2	2000 Mason-	Dixon Sof	Red Winter	Wheat Test ir	n Kentucky,			
(bu/a)         Rank         (bu/a)         Rank         Yield (bu/a)         Rank           72.1         52         66.7         44         65         23         89.2         2           74.7         39         60.4         81         45         84         83.8         11           78.5         21         73.4         17         61         33         81.7         17           79.7         17         78.0         5         67         16         87.0         6           66.3         74         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         77.1         11         87.7         4           73.2         67.9         57.0         76.4         4		Kentucky Yield	Kenfucky	Maryland Yield	Maryland	North Carolina Yield	North	78 COUNTY STEEL STORY	# C C C C C C C C C C C C C C C C C C C	Virginia		Overall	;
72.1         52         66.7         44         65         23         89.2         2           74.7         39         60.4         81         45         84         83.8         11           78.5         21         73.4         17         61         33         81.7         17           79.7         17         78.0         5         67         16         87.0         6           66.3         74         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         71         11         87.7         4           73.2         67.9         57.0         76.4         76.4	Line	(bu/a)	Rank <sup>1</sup>	(bu/a)	Rank	(bu/a)	Rank	and Section	Rank	neld (bu/a)	v irginia Rank	Yield (bu/a)	Overall Rank
74.7         39         60.4         81         45         84         83.8         11           78.5         21         73.4         17         61         33         81.7         17           79.7         17         78.0         5         67         16         87.0         6           66.3         74         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         77.1         11         87.7         4           73.2         67.9         57.0         76.4         76.4	Coker 9663	72.1	52	2.99	44	65	23	89.2	6	81.7	37	75.0	6
78.5         21         73.4         17         61         33         81.7         17           79.7         17         78.0         5         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         77.1         11         87.7         4           73.2         67.9         57.0         76.4         4           to vield.         76.4         76.4         76.4         76.4	Agripro Foster	74.7	39	60.4	81	45	84	83.8	1-	7.27	6 2	0.07	3 [
79.7         17         78.0         5         67         16         87.0         6           66.3         74         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         77         11         87.7         4           73.2         67.9         57.0         76.4         76.4         1           to vield.         7         7         7         7         7	Pioneer 2580	78.5	21	73.4	17	- 61	33	81.7	17	C.27	14	7: /0	2,
66.3         74         67.9         38         52         69         80.1         29           88.8         4         74.9         13         81         2         78.2         36           89.0         3         80.1         2         71         11         87.7         4           73.2         67.9         57.0         76.4         76.4	Roane	7.67	17	78.0	5		16	87.0	77	1.00°.	01	7 P	97
88.8 4 74.9 13 81 2 78.2 36 89.0 3 80.1 2 7.1 11 87.7 4 73.2 67.9 57.0 76.4	VA97W-469	. 66.3	74	6.29	38	52	69		90	4.00	70.01	(V. ) (V. )	9
89.0 3 80.1 2 7.1 11 87.7 4 73.2 67.9 57.0 76.4 to vield.	VA98W-591	88.8	7	74.9	13	81	2000	78.2	36	0.00	19.U	/ 2	7.5
73.2 67.9 57.0 76.4 to vield.	VA98W-593	89.0	က	80.1	7	7	H	87.7	2	7.00 8.88	7	δI.Υ 99.99	<u>,</u>
<sup>1</sup> Rank according to vield.	Test Mean (n=88)	73.2		6.79		57.0		76.4		79.7	†	71.3	7
	<sup>1</sup> Rank according	to yield.											

Coverall         Coverance         Coverance	Blacksburg Rank According to Yield 1 1 18 37 27 8 8 36	Blacksburg V Test Weight (Ibs/bu) 1 62.1 62.1 63.9 63.9 64.1 64.1 64.1	Warsaw Yield A (bu/a) 1 1 66 65 75 75 70 70 11	Warsaw Rank According to Yield 1 55 55 26 26 24 24	Warsaw Test Weight (lbs/bu) 1 59.5 58.2 58.2 57.6	Heading Date (Iulian)	1108011		
Overall         Rank         Test           Yield         According         Weight           2         2         2           3         82         36         60.8           5         78         48         59.2           80         19         59.2           89         13         62.3           90         10         62.8           87         18         62.9           87         18         62.9           7         0.6           Winter         Powdery         Leaf           Kill         Mildew         Rust           (0-9)²         (0-9)         (0-9)           3         3         1         0				Rank According to Yield 1 55 58 26 24 8 8 11	Test Weight (lbs/bu) 1 59.5 58.2 58.2 57.6 60.7	Heading Date (Iulian)	1108mh		
(bu/a)   to Yield (lbs/bu)     2		(lbs/bu) 1 62.1 61.3 60.8 63.9 64.1 64.1 61.5		to Yield  1  55  58  26  24  8	(lbs/bu) 1 59.5 58.2 57.6 60.7	(Tulian)	neignt	Lodging	
2 2 2 2 2 2 2 2 2 2 2 2 2 36 60.8 36 60.8 36 60.8 36 60.8 36 60.8 36 62.3 48 59.2 36 62.9 37 48 62.9 48 62.9 49 60.0 49 60.9 60.9 60.9 60.9 60.9 60.9 60.9 60.	1 18 37 12 8 8 8 36	1 62.1 61.3 60.8 63.9 64.1 64 61.5	1 66 65 75 75 70 70	1 55 58 26 24 8	1 59.5 58.2 57.6 60.7	`	(in.)	(0-9)	
3         82         36         60.8           78         48         59.8           580         87         19         59.2           89         13         62.3           90         10         62.9           87         18         62.9           87         18         62.9           87         18         62.9           7         0.6         0.6           Winter         Powdery         Leaf           Kill         Mildew         Rust           (0-9) <sup>2</sup> (0-9)         (0-9)           1         2         1           3         3         1           2         3	18 37 8 8 36 36	62.1 60.8 63.9 64.1 64.1 61.5	65 65 75 75 70 70 11	55 58 26 24 8 8	59.5 58.2 57.6 60.7	2	2	2	
78     48     59.8       89     13     62.3       89     13     62.3       90     10     62.8       87     18     62.9       87     18     62.9       7     0.6       Winter     Powdery     Leaf       Kill     Mildew     Rust       (0-9)²     (0-9)     (0-9)       3     3     1     0	37 12 8 8 36 36	61.3 60.8 63.9 64.1 61.5 0.5	65 75 75 75 70 70 70	58 26 24 8	58.2 57.6 60.7	123	40	0.5	
80 87 19 59.2 89 13 62.3 87 18 62.9 87 18 62.9 60.0 7 0.6 Winter Powdery Leaf Kill Mildew Rust (0-9) <sup>2</sup> (0-9) (0-9) 3 3 1 0	12 8 36 36	60.8 63.9 64.1 64 61.5	75 75 82 82 70 71	26 24 8 11	57.6 60.7	127	37	0.2	
89 13 62.3 87 18 62.9 87 18 62.9 7 0.6 Winter Powdery Leaf Kill Mildew Rust (0-9) <sup>2</sup> (0-9) (0-9) 3 3 1 0	8 27 36	63.9 64.1 64 61.5 0.5	75 84 82 70 71	24 8 11	60.7	123	36	0.2	
=84) 80 10 62.8 =84) 80 60.0 7 0.6 Winter Powdery Leaf Kill Mildew Rust (0-9) <sup>2</sup> (0-9) (0-9) 3 3 1 0	36	64.1 64 61.5 0.5	84 82 70 111	8 11		128	35	0.3	
87   18   62.9	36	64 61.5 0.5	82 70 11	11	61.4	125	33	0.5	
80   60.0     7   0.6     Winter Powdery Leaf Kill Mildew Rust (0-9) <sup>2</sup> (0-9) (0-9)     1   2   1     3   1   0     3   1   0		61.5	70		61.8	124	34	0.2	
Ninter   Powdery   Leaf   Kill   Mildew   Rust   (0-9)^2   (0-9)   (0-9)   (1   1   2   1   1   0   1   1   0   1   1   1   1		0.5	11		58.6	124	36	0.5	
Winter         Powdery         Leaf           Kill         Mildew         Rust           (0-9)²         (0-9)         (0-9)           1         2         1           3         1         0           2         2         3					1.1	-	Н	0.4	
Winter         Powdery         Leaf           Kill         Mildew         Rust           (0-9)²         (0-9)         (0-9)           1         2         1           3         1         0           2         2         3		The second secon					-		
Kill         Mildew         Rust           (0-9)²         (0-9)         (0-9)           1         2         1           3         1         0           2         2         3									
$ \begin{array}{c cccc} (0-9)^2 & (0-9) & (0-9) \\ \hline & 1 & 2 & 1 \\ & 3 & 1 & 0 \\ & 2 & 2 & 3 \\ \end{array} $									
1 2 1 3 1 0 2 2 3	BYDV (0-9)		· <u>-</u>		····				
3 1 0	2	***							
٦ 3	<b>,</b>								
1	က								
PIONEER 2580 3 0 2 2	2								
0 0 1	2								
VA98W-593 0 0 0 1	1								
Test Mean $(n=84)$ 2 1 2	2								
LSD (0.05) 1 1 2 2	<del>, -</del>								2
									0
<sup>1</sup> Belgian Lodging Scale=area x intensity x 0.2. Area is rated on a scale from 1 (plot unaffected) to 10 (entire plot affected). Intensity	on a scale from	1 (plot unaffe	ected) to 10	0 (entire pl	lot affected)	. Intensity			0
1 2	sease present:	9 = total plant	infection.						

BELLE MINA							
AL         AR         AR         BUIAC         FANK         BUIAC         RANK         BUIAC         RAN	KEISER	CY GRIFFIN		PLAINS	ARERDEEN	Collegivance	
BUIAC         RANK         BUIAC         BUIAC </th <th></th> <th></th> <th></th> <th>P P</th> <th>בויים</th> <th>GREENSBURG</th> <th>\$</th>				P P	בויים	GREENSBURG	\$
67         14         78         5         61         13         69         1         83         1           61         5         39         58         21         66         7         69         18           65         21         68         18         57         23         64         10         59         18           55         21         68         18         57         24         66         27         68         22         68         25           57         16         52         69         2         66         26         28         33         32         68         2         74         66         25           55         16         2         64         30         69         2         66         25         33         33         4         66         25         33         33         4         66         25         34         4         66         25         34         4         67         4         66         25         34         4         66         25         33         4         4         66         27         4         66         27         4	BU/AC RANK BU/AC	BU/AC	RANK BIVAC	NA DANK	OVIII	2 2 2 2	-
61         5         60         39         68         21         66         7         69         19           56         11         63         32         55         35         59         22         68         22           55         16         65         18         18         35         59         22         68         22 <td></td> <td>8</td> <td>— (j. j.)</td> <td>30</td> <td>2 2 2 3 2</td> <td>אר איני איני</td> <td><b>1</b></td>		8	— (j. j.)	30	2 2 2 3 2	אר איני איני	<b>1</b>
58         11         63         32         55         59         22         68         22         68         25         68         22         68         25         68         21         69         23         65         66         25         69         33         69         2         68         24         66         25         65         67         24         66         25         33         65         24         66         25         33         65         25         74         6         25         33         85         33         33         34         6         25         74         6         25         74         6         25         74         6         25         33         33         34         6         25         34         6         25         33         34         6         25         34         6         25         34         6         25         34         4         6         25         34         8         35         4         6         25         34         8         34         34         34         34         34         34         34         34         34         34	2 99		<u></u>		98	106	D 1
55         21         68         18         57         23         64         10         59         33           57         16         65         28         57         24         58         24         66         25           66         2         64         30         69         2         68         24         66         25           65         3         67         67         67         67         67         66         25           65         136         67         67         67         69         74         6           KY         KY         KY         LA         MD         117         1091           BUJAC         FANK         BUJAC         RANK         BUJAC         RANK         BUJAC         RANK           88         95         10         91         2         93         16         57         6           88         95         11         33         70         33         92         11         52         21           93         16         33         70         33         92         11         52         51           11	59 22	+	19	- 5	$\downarrow$	+	3
57         16         65         28         57         24         58         24         66         25           66         2         64         30         69         2         68         2         74         66           55         6         30         69         2         68         2         74         65           65         6         30         69         2         68         2         74         6           65         1         67         69         2         68         2         74         6           10         1         136         89         83         83         117         66         177           10AINC         FAIN         BUIAC         BUI	64	+	+	_	2 6	0 50	
66         2         64         30         69         2         68         2         74         65           55         65         30         69         2         68         2         74         6           55         65         65         3         66         66         66         66           65         136         77         87         1031         117         66         117           HOPKINSVILLE         LOGAN CO.         BATON ROUGE         QUEENSTOWN         PORTAGEVILLE         10.91         10.91           KY         KY         KY         LA         MD         MD         10.91         MO           BUIAC         RANK         BUIAC         BANK         BUIAC         BANK         BUIAC         BANK         BUIAC         RANK         BUIAC         RANK         BUIAC         RANK         BUIAC         RANK         BUIAC         RANK         BUIAC         RANK         BUIAC         BANK         BUIAC         BANK         BUIAC         BANK         BU	58 24	-	30 00	-	88	9/ 12	99
Signature   Sign	68	+	+	-	-		59
55         67         67         67         69         66           13.6         8.9         8.3         1.1.7         1.1.7           10.9         10.9         1.1.7         1.0.91         1.1.7           HOPKINSVIILE         LOGAN CO.         BATON ROUGE         QUEENSTOWN         PORTAGEVIILE           KY         KY         LA         AMD         AMD         AMD         AMD           BUJAC         RANK         BUJAC         RANK         BUJAC         RANK         BUJAC         RANK           88         8         92         40         91         2         93         40         57         7           88         8         79         18         95         4         51         20           77         37         86         11         93         8         53         18           82         11         32         86         11         32         86         53         18           82         11         33         70         33         92         11         51         61           82         43         11.6         33         92         11         51 <td>3</td> <td>-</td> <td>801</td> <td>9</td> <td>108 2</td> <td>81 33</td> <td>20</td>	3	-	801	9	108 2	81 33	20
13.6   8.9   8.3   11.7   10.91   10		7.1	102		83	18	
HOPKINSVILLE   LOGAN CO. BATON ROUGE QUEENSTOWN   PORTAGEVILLE		. α	7.0		40 60	OS.	3
HOPKINSVILLE		7.4	9.00		10.55		8.8
HOPKINSVILLE		t:	?; ;		00:01		6.7
KY         MAD	QUEENSTOWN	VILLE CLEVELAND	-	WOOSTER	CLEMSON	FI ORENCE	II INXXONX
BUIAC         RANK         BUIAC         BUIAC <td></td> <td><u> </u></td> <td></td> <td>동</td> <td></td> <td>S. C.</td> <td>AL NA</td>		<u> </u>		동		S. C.	AL NA
88         92         10         91         2         93         10         57         7           72         36         96         8         79         18         95         4         61         22           72         36         90         12         88         5         11         93         8         53         18           81         23         70         33         92         11         62         21           93         3         69         41         71         32         86         25         57         6           82         3         41         71         32         86         25         57         6           82         41         71         32         86         25         57         6           82         41         71         32         86         25         57         6           9.8         16.7         7         87         87         87         81         81         80           10         16.7         1         1         1         1         1         1         1         1         1         1	BU/AC RANK BU/AC	MANK BU/AC	ZANK	BU/AC RANK	RIVAC	DIVAC DANK	
72         36         8         79         18         95         4         61         22           72         36         90         12         88         5         97         3         52         20           81         23         81         33         70         33         92         11         52         21           93         3         69         41         71         32         86         25         57         6           82         86         41         71         32         86         25         57         6           9.8         16.7         7         87         10.2         7         6         7         6           9.8         16.7         7         87         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         11.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2	93 10 57	79			} {	ZA CANA	ŏ
72         36         90         12         88         5         97         3         55         20           81         37         85         11         93         8         53         18           81         33         70         33         92         11         52         21           93         3         69         41         71         32         86         57         6           82         86         77         87         57         6         51         6         6           9.8         16.7         77         87         7         87         6         6         6         7         6           9.8         16.7         7         87         7         10.2         7         6         7         6         7         10.2         7         6         7         10.2         7         6         6         10.2         8         7         10.2         8         6         10.2         8         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2	95	75	16 75	<b>5</b> 9	- -		5 &
81         23         81         37         85         11         93         8         53         18           81         33         70         33         92         11         52         21           93         3         69         41         71         32         86         25         57         6           82         86         77         87         51         6         57         6           9.8         16.7         7         87         7         6         57         6           9.8         16.7         86         77         87         10.2         6         6         7         6         7           5.9         11.6         8         77         8.5         12.3         6         7         10.2         6         7         10.2         6         10.2         6         10.2         6         10.2         6         10.2         10.2         10.2         6         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2         10.2	97 3	70		-	-	-	3 &
81         23         81         33         70         33         92         11         52         21           93         3         69         41         71         32         86         26         57         6           82         86         77         87         51         6         6         51         6           9.8         16.7         7         87         51         6         7         6         6         7         6         7         6         7         6         7         6         7         6         7         6         7         7         7         7         7         6         7         7         6         7         <	93 8	73	ļ.	-	53	53 33	286
93         3         69         41         71         32         86         57         6           82         86         77         87         51         6         6         6         6         6         77         6         77         6         6         6         6         6         6         6         6         70         6         70         6         70	92 11	69		-		-	71
82         86         77         87         51         51           9.8         16.7         9.1         10.2         51           5.9         11.6         9.1         10.2         2           5.9         11.6         6.5         12.3         10.2           COVERTON         PROSPER         BLACKSBURG         WARSAW         ENTRY MEANS           TX         TX         VA         VA         ALL LOCS           BU/AC         RANK         BU/AC         RANK         BU/AC         RANK           66         17         54         2         82         9         79         1         77         1           69         9         49         8         77         14         76         3         71         15           68         11         38         32         97         1         55         27         71         14           76         2         56         1         71         19         61         15         74         7           68         2         54         54         30         69         25           71         77	86 25	87		-	58 29	79 5	99
9.6         65         61         51           9.8         16.7         87         51           5.9         16.7         9.1         10.2           5.9         11.6         6.5         12.3           OVERTON         PROSPER         BLACKSBURG         WARSAW         ENTRY MEANS           TX         TX         VA         VA         ALL LOCS           BUJAC         RANK         BUJAC         RANK         BUJAC         RANK           66         17         54         2         82         9         79         1         77         1           69         9         49         8         77         14         76         3         74         5           68         11         38         32         97         1         55         27         71         14           56         36         41         25         68         24         54         30         69         25           76         2         56         1         77         14         7         7           64         2         56         1         77         74         7							
5.9         16.7         9.1         10.2           5.9         11.6         6.5         12.3           OVERTON         PROSPER         BLACKSBURG         WARSAW         ENTRY MEANS           TX         TX         VA         VA         ALL LOCS           BUJAC         RANK         BUJAC         RANK         BUJAC         RANK           66         17         54         2         82         9         1         77         1           69         9         49         8         77         14         76         3         74         5           68         11         38         32         97         1         55         27         71         14           58         36         41         25         68         24         54         30         69         25           76         2         56         1         71         19         61         15         74         7           71         77         77         19         67         74         7		71	76		61	63	62
5.9         11.6         6.5         12.3           OVERTON         PROSPER         BLACKSBURG         WARSAW         ENTRY MEANS           TX         VA         VA         ALL LOCS           BUJAC         RANK         BUJAC         RANK         BUJAC         RANK           69         9         49         8         77         14         76         3         74         5           68         21         47         11         79         10         55         26         71         14         5           68         11         38         32         97         1         55         27         71         14           76         2         56         1         71         19         61         15         74         7           76         2         56         1         71         19         61         15         74         7           71         72         58         54         57         7         7           84         72         58         68         7         7         7           84         84         72         72         85		o	6.5		9.7	8.8	10.7
OVERTON         PROSPER         BLACKSBURG         WARSAW         ENTRY MEANS           TX         VA         VA         ALL LOGS           BUIAC         RANK         BUIAC         RANK         BUIAC         RANK           66         17         54         2         82         9         79         1         77         1           69         9         49         8         77         14         76         3         74         5           68         11         38         32         97         1         55         27         71         14           76         2         56         1         71         19         61         15         74         7           71         7         7         7         19         61         15         74         7		6.4	S. CO.		6.6	8.8	10.6
TX	WARSAW	EANS ENTRY MEANS		ENTRY MEANS			
BUIAC         RANK         B           69         9         49         8         77         14         76         3         74         5           64         21         47         11         79         10         55         26         71         15           68         11         38         32         97         1         55         27         71         14         7           76         2         56         1         71         19         61         15         74         7           64         42         72         58         8         7         7         8	*	+	+	CV < 10%			
66         17         54         2         82         9         79         1         77         1           69         9         49         8         77         14         76         3         74         5           64         21         47         11         79         10         55         26         71         15           68         11         38         32         97         1         55         27         71         14           76         2         56         1         71         19         61         15         74         7           64         42         77         77         85         66         74         7	BU/AC RANK BU/AC	K BU/AC	3	AC RANK			
69         9         49         8         77         14         76         3         74         5           64         21         47         11         79         10         55         26         71         15           68         11         38         32         97         1         55         27         71         14           58         36         41         25         68         24         54         30         69         25           76         2         56         1         71         19         61         15         74         7           64         42         72         58         85         74         7	75 1 61		16	711			- -
64         21         47         11         79         10         55         26         71         15           68         11         38         32         97         1         55         27         71         14           58         36         41         25         68         24         54         30         69         25           76         2         56         1         71         19         61         15         74         7           64         42         72         58         7         85         7         7	76 3 74		6 72	· —			37 34 34 34
68         11         38         32         97         1         55         27         71         14           58         36         41         25         68         24         54         30         69         25           76         2         56         1         71         19         61         15         74         7           64         42         72         58         7         7         85         7         7	55 26 71						
58         36         41         25         68         24         54         30         69         25           76         2         56         1         71         19         61         15         74         7           64         42         72         58         7         85         7         7	55 27 71			2			
76         2         56         1         71         19         61         15         74         7           64         42         72         58         7         71         77         85         7         85	54 30		27 69				
64 42 72	61 15						
71 77	α						-
	2) 40						
18	10.8						

TABLE 10. MEAN PERFORMANCE OF VA98W-591 AND VA98W-593 IN THE 1999-2001 UNIFORM SOUTHERN SOFT RED WINTER WHEAT NURSERY: AGRONOMIC AND DISEASE RESISTANCE CHARACTERISTICS	AN PERFOR	MANCE OF STICS	VA98W-59	1 AND VA	198W-593 II	4 THE 1999.	2001 UNIFC	RM SOUTH	ERN SOFT	RED WIN	TER WHE	AT NUR	SERY: AGE	RONOMIC A	ND DISEASE
	WARSAW	3AW	MEAN YIELD	YIELD	MEAN T	MEAN TEST WT	MEAN HE	MEAN HEAD DATE	MEAN PLANT HT.	ANT HT.	MEAN LODGING	DGING			
	۸۸	_	ALL LOCS	SOC	ALL	ALL LOCS	ALL I	ALL LOCS	ALL LOCS	SOC	15 LOCS	SOC			
VARIETY	BU/AC	RANK	BU/AC	RANK	LBS/BU	RANK	JULIAN	RANK	INCHES	RANK	6.0	3			
VA98W-591	79		<u>, , , , , , , , , , , , , , , , , , , </u>		59.1	9	115	. 27	31	40	17				
VA98W-593	76	က	47	'n	8	-	115	53	<u>ب</u>	37	4	. 🔻			
<b>COKER 9835</b>	55	58	71	15	56.6	33	116	35	31	39	0.8				
COKER 9663	55	27	71	4	58.3	12	115	25	36	က	2.2	2			
MASON	54	8	69	25	56.6	8	113	2	35	11	14	4			
AGS 2000	61	15	74	7	58.5	8	114	14	34	21	-	4			
					TOLICE										
	POWNERY EAVETTE	EAVETTE						CTEM	STOIDE	LECCIAN			Contaction		
	MILDEW	VILLE	KIBLER	MINA	PLAINS	BEEVILLE	ST.PAUL	RUST		nessikii FLY	SBMV	WSSV	Septoria	BLOTCH	
:	8 LOCS	AR	AR	A	GA	<b>*</b>	돌	Z	2 LOCS	¥	KS	2 LOCS	8 LOCS	2 LOCS	
VARIETY	6-0 0	%	%	6-0	6-0	L	L	۵	6-0	9-0	6-0	6-0	6-0	6-0	
VA98W-591	9.0	<b>\F</b>	62	0		~	Ħ	5MR-MS	9.0	1.3		2.4	2.7	2.3	
VA98W-593	0.4	ଜ	င္သ	0	4	폾		5R-MR	7	8		2.7	2.9	2.5	
COKER 9835	3.3	70	S	4	O	œ	T.	퐈	3.5		7	2.8	2.9	1.3	
COKER 9663	3.4	23	ļ	0	8	œ	TR	퐈	1.7	2.3	မ	က	2.6	1.3	
MASON	3.3	23	4	0	4	8	TMS-S	30MS-S	0.7	1.7	2	2.9	3.2	2.8	
AGS 2000	1.3	9	0	0	0	MR	TR	10MR-MS	2.7	_	တ	5.6	3.5	1.5	

TABLE 11.	MILL INC AL	ND BAKING	CHALITY	OF VAGRA	LEGI AND	VA08W_503			
IABLE II.		UNIFORM					<u> </u>		
	114 2000-01	UNIFORIN	SOUTHER	M SKAA AAL	TEAT NON	JEK 1			<u>.</u>
		OSNISA POR EN ÚSICOS		 	[ 		en la vita da la constituir. Al la vita da la constituir da constituir da constituir da constituir da constituir da constituir da constitui	] 나일은 강화한 경영하	
VARIETY	] MILL	BAKE	SOFT	FLOUR	ION 1 FLOUR	GLUTEN	WATER	COOKIE	
VARIETI			EQUIV.	YIELD	PROTEIN	STRENGTH	ABSORB	DIAM	
	SCORE	SCORE	EQUIV.	TIELD	PROTEIN	SIKENGIII	ADOUND	<i>Dn</i> ((0)	
VA98W-591	98.8 B	101.1 A	60.7	70.8	8.66	143.7	57.2	17.85	
VA98W-593	95.8 B	86.0 D	55.9**	70.6	8.77	146.5	59.7**	17.58	
COKER 9835	104.8 A	98.9 B	64.6	71.8	8.33	107	59.4	17.98	
COKER 9663	95.2 B	95.4 B	54.3**	70.9	8.63	138.6	57.2	17.82	
MASON=STD	100 A	100 A	62.7	70.9	8.99	135.2	56.4	17.56	
AGS 2000	104.5 A	103.6 A	61.1	72.9	8.98	125.4	55	17.68	
				REG	ON 2				
	MILL	BAKE	SOFT	FLOUR	FLOUR	GLUTEN	WATER	COOKIE	
	SCORE	SCORE	EQUIV.	YIELD	PROTEIN	STRENGTH	ABSORB	DIAM	
				71.3	9.4	133	57.3 <b>*</b>	18.03	
VA98W-591	98.4 B	93.4 C	55.4*	ing a great registration of property by Life	Miller Market Street a	tera populari anchi pasa in ilimit h	59.4**	17.44*	
VA98W-593	93.3 C	71.1 F	50.9**	70.6	9.98	140.7			
COKER 9835	103.2 A	95.3 B	59.2	72.1	9.14	112.3	58.6**	18.37	
COKER 9663	92.4 C	82.0 E	49.4**	70.8	8.86	125.9	56.4	17.65	
MASON=STD	100.0 A	100.1 A	59.3	71.4	9.6	130.9	55	17.88	
AGS 2000	103.1 A	97.8 B	54.3*	73.4	9.3	112.6	55.9	18.35	

AN KNOXVILLE OVERTON BUIAC RANK B	BAY K	KEISED	MEMA	RAV KEISED NEWADIZ								i						
BUJAC   RANK		ADA	NEW	٧٧.		5	GRIFFIN	Z	ABERDEEN	DEEN	URBANA		GREENSBURG	BURG	W LAF	W LAFAYETTE	Mariadoow	ă
Color   Carrol Pumar   Carrol Pank   Bujac   Rank   Ran		AT (	-		디				Ω	_	=		Z			2		
63 41 51 38 84 9 17 77 9 6 6 1 1 6 6 2 1 1 77 9 6 6 6 6 1 1 5 6 2 7 79 12 6 1 1 2 6 1		A PARA			S V		ပ	RANK	BU/AC	RANK	BU/AC F	RANK	BU/AC	RANK	BU/AC	RANK	T CV/I TO	DANK
State   Stat	_ 0 0 0	_	ି - ଜୁନ		5	7	22	9		35		- 200		•	90			
1   56   27   79   12   61   35   74   70   24   74   76   11   56   27   79   12   61   35   74   70   24   66   35   56   26   26   87   2   64   32   74   75   75   67   70   24   70   75   70   70   70   70   70   70	32		92	21	11	<b>o</b>	69	o	11	37	68	- 28	98	, <del>,</del> ,	3 5		2 G	2 2
11   56   27   79   12   61   35     74   16   62   11   83   7   70   24     66   35   56   26   87   2   64   32     71   58   75   67   70   24     71   58   75   67   71     12.5   12   13	41	88	84	6	37	42	33	41	92	15	84	56	202	3 5	2 8	- 6	8	7
16   62   11   83   7   70   24     16   62   26   87   2   64   32     14.5   11.3	Ξ	27	79	12	61	39	52	53	82	33	်	3 4	2 6	1	8	ဌ	2	4
14.5   56   26   87   2   64   32     14.5   11.3   14.7   10.9     12.5   12   10.9   14.7   10.9     I.S.   I.S.   I.S.   I.S.   I.S.   I.S.     I.S.   I.S.   I.S.   I.S.   I.S.   I.S.     I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.     I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.   I.S.     I.S.   I.	16	1	83	7	2	24	62	17	g	1 0	8 8	5 4	3 5	7,4	3	4	29	6
14.5   58   75   67   67   12.5   12.5   14.7   11.3   14.7   10.9   14.5   12.5   12.5   12.5   10.9   14.7   10.9   1	35	26	87	2	79	32	74	: a	3 9	2 2	B	-   3	8	0	133	19	99	22
14.5   58   75   67   67   14.5   14.5   14.5   12.5   12   10.9   14.7   10.9   12.5   12   10.9   14.7   10.9   14.5   14.5   10.9   14.5					5	3	-	0	8	74	26	24	93	32	86	37	99	28
12.5			75		67		5.7		0.7		6							
12.5				T	14.7		5		70		3		97		102		29	
MICHITA   WINFIELD   LOGAN CO. CLARKSVILLE   KS   KS   KS   KS   KS   KS   KS   K				+	ř Ç				21.45		5.56		6.98		9.1		6.3	
WICHITA   WINFIELD   LOGAN CO. CLARKSVILLE     KS					8.0		-		17.87		4.55		5.24		6.4		8.1	
Name	-	VEIELD	LOGAN	T	CI ABKS	2 1 1/2	100	*10		1		•						
BUJAC         RANK         BUJAC         BUJAC </td <td>-</td> <td>KG</td> <td>3</td> <td>+</td> <td></td> <td>1</td> <td>ACCIONDIA TO</td> <td>¥ O</td> <td>LINCOLN</td> <td>S I</td> <td>ITACA</td> <td>4</td> <td>SMITHVILLE</td> <td>ILE</td> <td>WOOSTER</td> <td>STER</td> <td>NAIRN</td> <td>Z</td>	-	KG	3	+		1	ACCIONDIA TO	¥ O	LINCOLN	S I	ITACA	4	SMITHVILLE	ILE	WOOSTER	STER	NAIRN	Z
49         22         70         17         100         7         82         8           37         40         55         38         109         2         78         20           46         32         64         28         79         41         82         5           45         34         58         35         98         10         78         17           48         26         60         34         84         31         82         4           49         66         34         84         31         82         4           49         66         90         76         76         1           49         66         90         76         76         1           12.5         4.8         17.9         76         1           12.5         4.4         11.9         9.5         1           12.5         4.4         11.9         9.5         1           104         26         79         2         89         4           109         14         71         1         36         1           104         26         24	AC DANK DITA	DANIE C		711.0	2				W Z		¥		ᆼ		ᆼ	1	NO	_
478         222         70         17         100         7         82         8           37         40         55         38         109         2         78         20           46         32         64         28         79         41         82         5           48         26         60         34         84         31         82         4           46         31         71         14         90         21         87         1           49         66         90         21         87         1           49         66         90         76         76           9.9         4.8         17.9         76         7           12.5         4.4         17.9         76         7         1           6.9         4.8         17.9         7.6         7         1           12.5         4.4         17.9         7.6         7         1           ANA         11.9         7.7         89         3         3           BUJAC         RAMK         BUJAC         80         4         4         4         4         4	אווים עאויאן אין	YARY Y		_	S S	<u> </u>	Ö	RANK	BU/AC	¥	BU/AC R	RANK	BU/AC F	RANK	BU/AC	RANK	RIVAC	PANK
37         40         50         38         109         2         78         20           46         32         64         28         79         41         82         5           45         34         58         35         98         10         78         17           48         26         60         34         84         31         82         4           49         66         31         71         14         90         21         87         1           49         66         90         76         95         76         1         1         1         1         1         87         1<	- 7 (	<u>}</u> ;	3 3 -		88	œ	88	38	24	\$	63	W.	1.1		82	22	8	α
40         32         64         28         79         41         82         5           45         34         58         35         98         10         78         17           48         26         60         34         84         31         82         4           49         66         31         71         14         90         21         87         1           49         66         90         76         95         76         1           12.5         4.8         17.9         11.6         1         1           12.5         4.4         11.9         9.5         1           RIDGETOWN         KNOXVIILE         OVERTON         BILACKSBURG           ON         7         7         7         4           104         7         1.9         9.5         1           105         7         4         1.0         89         4           109         7         4         7         2         58         4           104         7         4         4         4         1         1         1           105         7	04	8	109	2	28	ಜ	78	4	20	78	55	17	- 99	32	Σ	1 K	}	) C
450         34         35         98         10         78         17           48         26         60         34         84         31         82         4           46         31         71         14         90         21         87         1           49         66         90         76         76         1           9.9         4.8         17.9         11.6         1           12.5         4.4         11.9         9.5         1           NA         11.9         9.5         1         1           ON         TA         TX         VA         NA           BUJAC         RANK BUJAC         RANK         BUJAC         RANK         BUJAC           109         14         71         12         57         21         89         4           109         14         71         12         57         21         89         4           103         29         65         24         66         1         71         36           114         5         73         11         49         32         79         17           106 <td>37</td> <td>28</td> <td>6/</td> <td>14</td> <td>82</td> <td>5</td> <td>77</td> <td>17</td> <td>25</td> <td>25</td> <td>62</td> <td>39</td> <td>29</td> <td>4</td> <td>63</td> <td>40</td> <td>70</td> <td>2</td>	37	28	6/	14	82	5	77	17	25	25	62	39	29	4	63	40	70	2
46         31         71         14         90         21         87         1           49         66         90         21         87         1           9.9         4.8         17.9         76         1           12.5         4.4         11.9         9.5         1           12.5         4.4         11.9         9.5         1           RIDGETOWN KNOXVILLE OVERTON KNOXVILLE OVERTON FAUK         BUIAC RANK BUJAC RANK BUJ	40 00	S S	88	9	78	17	61	<del>1</del>	42	37	55	20	49	36	17	42	0.2	3
49 66 90 76 76 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1	27 60	34	\$ 6	50	82	4	29	=	89	19	56	15	98	-	84	23	68	3 2
49   66   90   76   11.5   11.5   11.6   1   1   12.5   4.4   11.9   9.5   1   1   1   1   1   1   1   1   1	5	4	3	21	87		25	4	49	35	62	0	29	31	97	-	88	17
12.5   4.8   17.9   11.6   1   12.5   14.8   17.9   11.6   1   1   1   1   1   1   1   1   1			Co		32		- 20		60									
12.5			17.0		0 44	1	5 [		8		54		7		82		82	
T.   T.   T.   H.   H.   H.   H.   H.			p. C		0, 1		17.7				Ξ		17.7		6.1			
Name			<u>-</u>		0. 0.		14.7				12.1		12.4		4,6		9.1	
Name	+	- 1 1/X	, C															
BUJAC         RANK         BUJAC         AU		TE	OVER.		BLACKS	BURG	WARSAW	¥ K	ARLINGTON		MEAN	-	MEAN	z	MEAN	Z		
DUMAC         KANK         BUMAC         RANK         BUMAC         RANK           104         26         79         2         58         19         89         4           109         14         71         12         57         21         89         3           94         44         57         43         43         26         64         41           103         29         65         24         66         1         71         36           114         5         73         11         49         32         79         17           113         6         73         9         59         17         97         1           106         67         53.3         76         96         76         96		2	~		>				×		ALL LOCS	တ္သ	IN-REGION	NO.	CV < 10%	10%		
104     20     73     2     58     19     89     4       109     14     71     12     57     21     89     3       94     44     57     43     26     64     41       103     29     65     24     66     1     71     36       114     5     73     11     49     32     79     17       113     6     73     9     59     17     97     1       106     67     53.3     76     62	AC RAIN DUIN	KAR S		ш,	BU/AC		Ü	RANK	BU/AC	v	BU/AC F	v	BU/AC F	¥	BU/AC	RANK		
109     14     71     12     57     21     89     3       94     44     57     43     43     26     64     41       103     29     65     24     66     1     71     36       114     5     73     11     49     32     79     17       113     6     73     9     59     17     97     1       106     67     53.3     76     62	- 0; -	7	4: 3:	120 m 110	නු	7	6	* · · · · · · · · · · · · · · · · · · ·	7	œ	79	-	8	7	24	4	- :	4
94     44     57     43     43     26     64     41       103     29     65     24     66     1     71     36       114     5     73     11     49     32     79     17       113     6     73     9     59     17     97     1       106     67     53.3     76     62	4	12			စ္ဆ	က	98	က	88	<u>~</u>	 92	=	<u>~</u>	_	E	· <del>'</del>		Ser No No
103     29     65     24     66     1     71     36       114     5     73     11     49     32     79     17       113     6     73     9     59     17     97     1       106     67     53.3     76     62	44	43	£3		64	41	43	44	63	34	65	44	69	43	73	44		
114     5     73     11     49     32     79     17       113     6     73     9     59     17     97     1       106     67     53.3     76     62     10.8	29	24	99		7.1	36	28	84	99	23	70	38	74	38	2 2	4		
113     6     73     9     59     17     97     1       106     67     53.3     76       6.2     10.8	S	=	49		2	17	84	4	75	5	78	2	8	6	2 8	2 4		
106 67 53.3 76 6.2 10.8	ဖ	တ	တ္ထ		97		83	24	75	4	77	80	82	> ~	3 6	> -		
106 67 53.3 76 6.2 10.8												,	5	-	5	-		
108			53.3		76		29		99		69		63	-				
0.5					9.5				9.1		6.4	-	8.1					
4.2 10					9.3				8.9		8.9		7.6					

BLAC   BLAC     BLAC	BLACKSBURG  VA  NA  RAC  RANK  9  4  4  41  36  17  17	ALI BU/AC										
BU BBU BU	KA KA	AL BU/AC						_				
BUB 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	A K	BU/AC										WINTER
	*	BU/AC	MEAN	MEAN TEST WT	STWT	MEAN HEAD DATE	ND DATE	MEAN PLANT HT	ANT HT.	MEAN LODGING	DGING	KILL
		BU/AC	ALL LOCS	ALL LC	SOC	ALL L(	ocs	ALL LOCS	SOC.	12 LOCS	S	e Locs
			RANK	LBS/BU F	RANK	JULIAN	RANK	INCHES	RANK	6-0		6-0
	36 36 17 17			- 1:09	2	126	16	30	_ 			
	17 17	76	<del>-</del>	6.09	· · · · · · · · · · · · · · · · · · ·	126	-	ි ද	4	2.1		 9.6
<del></del>	17 17 36	92	44	58.1	33	128	31	8	4	2.2		4
<del></del>	1 1	70	38	58.1	30	129	35	33	21	1.4		4
<del></del>	-	78	5	58.3	26	126	10	33	20	2.4		4.4
<del>-  </del>		77	80	60.4	2	127	24	30	38	1.6		3.7
<del></del>												
						-						
<del> </del> ;			-LEAF RUST									
<del>-                                    </del>	RY FAYETTE-										LEAF	GLUME
		KIBLER	LOGAN CO.	BLACKSBURG		STRIPE RUST		BYDV	SBMV	WSSV B	ВГОТСН	ВГОТСН
	S	AR	≩	W	AR	2		۲	2 LOCS	<del> </del>	8 LOCS	2
	%	%	6-0	6-0	%	% FLAG	4-Jan	6-0	6-0	<del>6</del> -0	6-0	6-0
	15	33	0	0		0		5.5	7	7	2.5	2.5
	15	33	0	0	_	<b> </b>	7	6.5	6.5	4.7	m	2.5
CALDWELL 3.4	-	4	5	0	1	_		7.5	2	2	4.4	2
FOSTER 3	19	4	7	4	90	25		œ	1.5	4.7	3.1	က
PATTON 2.9	တ	4	F	0	20	30	4	5,5	2	2.3	4.1	က
ROANE 1.2	4	4	L	0	o	F	4	ω	ო	4	3.2	2
		THE BUILDING HEAD BY SENT	THUSH W									
	5 6			איס איאיכדם מחום								
VARIETY WINCIDE	""" ALIVENCE "SEVEDITY INDEX		SEED OUBLITY	SIDGE I OWN ON								
	9			9							-	
VAG8W-501 18 7	— (1) — (2)	17		81								
) ( <u> </u>		2.7	4	1.2					4 4 4 14			
		2.2	m	9							-	
-	-	3.5	3.3	က						-		
PATTON 13.3	3 9.7	1.3	4.3	3								
ROANE 19.7	7 9.7	1.9	2	1.2								

	IN THE 200	0-01 UNIF	ORM EAST	ERN SRW	WHEAT N	JRSERY			-
VARIETY	MiLL	BAKE	SOFT	FLOUR	FLOUR	GLUTEN	WATER	COOKIE	
	SCORE	SCORE	EQUIV.	YIELD	PROTEIN	STRENGTH	ABSORB	DIAM	
VA98W-591	96.4 B	90.1 C	55.4	70.9*	8.52	117.2	61.03	17.74*	
VA98W-593	91.6 C	82.1 E	51.4*	70.2**	8.26	120.6	63.50*	17.84*	
CALDWELL	104.1 A	110.0 A	57.8	72.7	8.35	104.7	56.93	18.69	
FOSTER	104.5 A	107.0 A	54.8	74.4	9.31	102.1	56.89	18.46	
PATTON-STD	100 A	99.9 A	55.4	72	8.86	80.8	60.44	18.15	
ROANE	91.6 C	78.4 F	55.7	69.6**	8.44	113.2	61.71	17.24**	

FHB FHB Scabby Vouncil So	FHB		FHB		FHR		Scaphy		Komasi		Speed				{	
Line/Variety	Incidence (1-100)	RANK	S	RANK	Index (1-100)	RANK	Seed (%)	PANE	Quality	) in the second	Quality		Vomitoxin DON		Greenhouse Type 2	
No. of tests =>			7		3		S w		1	TOWN B	1	KANK	(ppm)	RANK	(0-100)	RANK
Ernie	32	1	13	-	7	-	18	2	1.3	-	1.3	3	9.9	7	25.7	2
Coker 9835	74	29	47	28	43	29	53	59	7	29	0.7	27	11.6	15	71.2	26
Coker 9474	40	9	19	4	10	2	16	1	1.3	2	1.7	2	3.3	,	31.4	2 "
VA98W-591	48	7	19		12	3		7	4.3	  -  15	_ 	 	9 7	. ्र	70.0	· .
VA98W-593	45	٠,	26	16	15		21	4	3.7	· —		4	, c	) ) 	70.0	왕 경 3
Mean (N=29)	53		27		8		31		4		9	-	£ =	٦ -	40.7	<del>1</del>
LSD (0.05)	13.0		10		12.0		14.0		1.4		0.5		8.7		21.2	
C.V. (%)	23.9		27.3		51.5		34.1		20.7		27.3		62.4		23.2	
											1		1.000		0.02	
<sup>1</sup> 0=Poor, 1=Fair, and 2=Good quality.	ir. and 2=Gr	no poc	ality.													
														_		

Table 16. Entry means for 2001 Northern Uniform Winter Wheat Scab Nursery. Each entry was compared to the	means for	2001 North	ern Uni	form Win	ter Wheat	Scab Nurse	ry. Each entry	was com	nared to the
lowest (L) and highest (H) means in each column using LDG <sub>(0.05)</sub> . "# Low Scores" is the number of disease traits for	highest (H)	means in es	nch colu	mn using	LDG(0.05)	. "# Low Sca	ores" is the nur	mber of d	isease traits for
which an entry received a low score, "# High Scores" is the times it received a high score. Numbers below column	received a	low score, "	# High !	scores" is	the times	it received a	high score. N	Jumbers l	selow column
incaunigo indicate tile number of tests (focations) upon which data are based.	umu aun an	per or tests (	location	v uodn (si	which data	are based.			
							FHB		
	FHB	FHB	FHB	Kernel	Scabby	Vomitoxin	FHB Kernel Scabby Vomitoxin Greenhouse		
Line/Variety	Severity (%)	Incidence Index Rating (%) (%) (0-100)	Index (%)	ndex Rating (%) (0-100)	Seed (%)	NOQ (nam)	Tests	# Low	# High Soores
No. of tests=>	6	80	∞	4	8	3	25		anga agair :
Patterson	38.4 H	Н 9:19	34.1 H	31.0 L	14.7 L	76.9	52.4	m	3
Freedom	21.4	62.8 H	21.8	50.1	17.5 L	12.6 L	30.5	2	-
P2545	39.8 H	71.4 H	40.7 H	66.5 H	26.8 H	16.2 L	55.8	-	3
Emie	20.1 L	51.4	19.4	29.9 L	16.9L	7.9 L	28.7	4	0
Roane	20.0 L	60.3 H	19.9	32.0 L	16.3 L	5.4 L	27.3	4	1
VA98W-591	20.4 L	56.4	16.6 L	34.5 L	9.7 L	7.4 L	47.1	\$	0
VA98W-593	27.4	59.8 H	21.6	36.3 L	7.2 L	5.3 L	58.8	က	
Mean (N=49)	24.6	57.5	22.6	42.0	18.4	11.9	46.3		
LSD (0.05)	9.3	15.0	10.5	17.1	15.0	14.2	18.9		
								, , , ,	

REPRODUCE LOCALLY. Include form number and edition date on all	reproductions.	ORM APPROVED - OMB No. 0581-0055
U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE  EXHIBIT E  STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to detect certificate is to be issued (7 U.S.C. 2 confidential until the certificate is issued.)	(21). The information is held
1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
Virginia Tech Intellectual Properties, Inc.	OR EXPERIMENTAL NUMBER	V. V. R. A. E. I. V. A. I. I. V.
viigina reon meleccuai rioperaes, mo.	VA98W-591	McCormick
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (Include area code)
1872 Pratt Drive, Suite 1625	540-951-9374	540-951-5292
Blacksburg, VA 24060		
	7. PVPO NUMBER 2 0 0	300115
8. Does the applicant own all rights to the variety? Mark an "X" in the		
9. Is the applicant (individual or company) a U.S. national or a U.S. b	ased company? If no, give name of c	ountry. YES NO
10. Is the applicant the original owner? YES	NO If no, please answer one	of the following:
	<del>_</del>	
a. If the original rights to variety were owned by individual(s), is (	are) the original owner(s) a U.S. Nation  NO If no, give name of counts	
	in ito, give items of occurre	,
b. If the original rights to variety were owned by a company(ies), YES	, is (are) the original owner(s) a U.S. ba  NO If no, give name of count	
Laurend L		
11. Additional explanation on ownership (If needed, use the reverse to	for extra space):	
Original owner Virginia Polytechnic Institute and State University assi (See attached)	igned its owernship to current owner Vi	ginia Tech Intellectual Properties, Inc.
	•	
·		
DI CAOC MOTE.		
PLEASE NOTE:		
Plant variety protection can only be afforded to the owners (not licens	sees) who meet the following criteria:	
<ol> <li>If the rights to the variety are owned by the original breeder, that penaltional of a country which affords similar protection to nationals of</li> </ol>		
<ol><li>If the rights to the variety are owned by the company which employ nationals of a UPOV member country, or owned by nationals of a c genus and species.</li></ol>	yed the original breeder(s), the company country which affords similar protection	y must be U.S. based, owned by to nationals of the U.S. for the same
3. If the applicant is an owner who is not the original owner, both the	original owner and the applicant must n	neet one of the above criteria.
The original breeder/owner may be the individual or company who dir Act for definitions.	rected the final breeding. See Section 4	11(a)(2) of the Plant Variety Protection
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VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (hereinafter referred to as the "UNIVERSITY"), assigns to VIRGINIA TECH INTELLECTUAL PROPERTIES, INC. (hereinafter referred to as "VTIP") all rights, title and interest in and to the GERMPLASMS listed below as held by the UNIVERSITY:

VTIP 02.047 P	Price/VA96-44-321 Barley
VTIP 02.048 V	/A98W-593 Wheat
VTIP 02.049 V	/A97 <u>W-469 Wh</u> eat
VTIP 02.050 N	AcCormick/VA98W-591

The UNIVERSITY, by its authorized agents, agrees that it will execute all necessary assignments as requested by VTIP, to facilitate the filing of patent applications and/or copyright registrations. It will render any reasonable assistance requested to aid in preparation of such applications and/or registrations.

The UNIVERSITY shall retain the right to make use of the GERMPLASM for internal research and other non-commercial purposes without cost to the UNIVERSITY.

All royalties, rents, payments, or any cash receipts from the sale, assignment, transfer, licensing or use of the GERMPLASM shall be the property of VTIP and shall be distributed according to the provisions of the Virginia Agricultural Experiment Station (VAES) Plant Germplasm Release Policy (PGRP).

Prior to the execution of this Assignment, the UNIVERSITY has not granted the right of license to make, use, or sell said GERMPLASM to anyone except to VTIP, nor has it otherwise encumbered its rights, title and interest in said GERMPLASM, and it will not execute any instrument in conflict with this Assignment.

IN	<b>WITNESS</b>	WHEREOF,	the UNIV	ERSITY	has	caused	this	Assignment to	) be
signed this	/8	day of _	AMMI					, 2002.	

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

BY \_

MINNIS E. RIDENOUR
Chief Operating Officer

Chief Operating Officer

#### STATE OF VIRGINIA

COUNTY OF MONTGOMERY, to-wit:

The foregoing in	astrument was acknowledged before me this 18th day of
APRIL	, 2002, by MINNIS E. RIDENOUR CHIEF OPERATING
	Officer
of Virginia Polytechnic	Institute and State University, on behalf of said University.
•	
	-X Q 10. >-
Notary P	while
Notary F	uone
My com	mission expires: 12/31/04